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Purpose/Objective: So far risk stratification and treatment decisions in the management of prostate cancer patients are based on T stage, Gleason score and PSA value. Currently used risk classifications often lead to under- or overtreatment. Other parameters to better characterize prostate cancer and guide the treatment are urgently needed. Therefore we conducted a study correlating miRNA expression levels with outcome data.
Materials and Methods: MiRNA expression levels of eight hundred miRNAs of forty three patients who had undergone salvage radiation therapy following biochemical failure were analyzed using the nCounter human v2 assay (NanoString Technologies; Seattle, WA). Formalin-fixed, paraffin-embedded tissue blocks were used. Expression data were correlated with biochemical relapse free survival. Univariate and multivariate Cox proportion hazards regression models as well as receiver operating characteristics were utilized to identify statistically significant miRNAs
Results: Eighty eight miRNAs were identified to be significantly (p36 months). Nine miRNAs were identified to be significantly (p
Conclusions: miRNA signatures can distinguish patients with early versus late recurrence after prostatectomy. Two novel miRNAs were identified that significantly improve prediction of biochemical failure post-salvage radiation therapy compared to available clinico-histopathological factors alone, supporting the use of miRNAs within clinically used predictive models. Both findings warrant further validation studies.

PO-0732

Temporal patterns of patient-reported symptom groups after prostate cancer radiotherapy

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Purpose/Objective: Toxicity related to the gastrointestinal (GI) and genitourinary GU tract following radiotherapy (RT) for prostate cancer involves the interplay between various symptoms. The purpose of this study was to investigate the robustness of patient-reported symptoms over time to follow-up within identified symptom groups.
Materials and Methods: The investigated subjects were previously treated in a clinical trial (to explore the toxicity and efficacy of pelvic lymph node RT) with intensity-modulated RT for locally advanced prostate cancer in 2011-2012 (N=87). Prescribed dose was 78 Gy to the prostate and 56 Gy to the pelvic lymph nodes in 39 fractions. The patients completed the study-specific questionnaire at different time points within the first year after RT (at 3, 6, and 12 months). This study is based on the 18 and 12 GI and GU symptoms, respectively, that directly reflected potential RT-induced injuries. For both GI and GU toxicity, symptom groups were generated based on interacting symptoms as identified by factor analysis (FA). The temporal pattern of symptoms in these symptom groups was studied within the first year after RT.
Results: Two GI and two GU symptom groups were identified at 3, 6, and 12 months post-RT. Based on the symptoms included, the GI symptom groups could be labelled as faecal *Leakage* (4-7 symptoms), and *Obstruction* (3-7 symptoms), and the GU symptom groups as urinary *Incontinence* (3-8 symptoms), and *Obstruction* (3-9 symptoms). Two symptoms of each symptom group remained present across the investigated time-points.
Conclusions: Our findings indicate that at least two patient-reported GI and GU symptoms remain present during the first year after RT following RT for locally advanced prostate cancer in each investigated symptom group. These symptoms have the potential to serve as attractive endpoints in quantitative dose-response modelling to better understand the temporal pattern of RT-induced causes of the GI - and GU tract.

PO-0733

Postoperative radiotherapy prostate cancer: survival, toxicity and use of an in house analysis system (PRODVH)

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Purpose/Objective: To retrospectively evaluate overall survival (OS), biochemical and metastatic relapse-free survival (bRFS and mRFS), late genitourinary and gastrointestinal toxicity in patients (pts) treated with adjuvant radiotherapy (ART) or salvage radiotherapy (SRT) for prostate cancer. We imported all DVH into an in house system (PRODVH) to elaborate means and comparisons within groups clinically identified.
Materials and Methods: From 1999 to 2013, 240 pts were selected for the analysis (120 pts treated with ART and 120 pts treated with SRT). The median follow-up was 50,7 months. bRFS, mRFS and OS were correlated with age, PSA, Gleason Score, T and N stage, surgical margins, radiotherapy doses and technique, intention to treat (ASTRO guidelines: Int J Radiat Oncol Biol Phys. 2013). Toxicity data were collected using the RTOG and CTCAE v.4 scales and correlated to radiotherapy doses and technique, PTV and organ at risk volume. Kaplan-Meyer and Cox regression were performed for survivals and Chi Square test were used for